



Organisation
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• Harz - Braunschweiger
• Land - Ostfalen
• UNESCO
• Global Geopark

Landmark **12**

Hohe Linde



 **GEO PARK**[®]
Harz . Braunschweiger Land . Ostfalen

Harz



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UNESCO
Global Geopark

On the 17th of November, 2015, during the 38th UNESCO General Assembly, the 195 member states of the United Nations resolved to introduce a new title. As a result, Geoparks can

be distinguished as **UNESCO Global Geoparks**.

As early as 2004, 25 European and Chinese Geoparks had founded the Global Geoparks Network (GGN). In autumn of that year Geopark Harz · Braunschweiger Land · Ostfalen became part of the network. In addition, there are various regional networks, among them the European Geoparks Network (EGN). These coordinate international cooperation.



In the above overview map you can see the locations of all UNESCO Global Geoparks in Europe, including UNESCO Global Geopark Harz · Braunschweiger Land · Ostfalen and the borders of its parts.

UNESCO-Geoparks are clearly defined, unique areas, in which geosites and landscapes of international geological importance are found. The purpose of every UNESCO-Geopark is to protect the geological heritage and to promote environmental education and sustainable regional development. Actions which can inflict considerable damage on geosites are forbidden by law.



1

Monument of mining history

Point cone mine dump Hohe Linde

The pyramid north of the town of Sangerhausen can be seen far across the landscape and is the mine dump from the former Thomas Müntzer mine and a highly visible monument of mining history. The basis for more than 800 years of mining in the area of Sangerhausen was a rock layer of about 30 cm thickness – the copper shale. Mining in this area was first mentioned in 1006 in the deed of gift from the Emperor HEINRICH II. The technological development of mining is impressive in the size and composition of mine dumps and reaches from small family ones from the very beginning of mining to huge ones from the more recent past. In 1944 a new mine was sunk to a depth of 52 m below the surface north of Sangerhausen.

After the standstill after the war, work could be continued from 1947 onwards.



Geopark panel at the mine dump



View over Sangerhausen

The first large copper mine in the mining area of Sangerhausen was named after THOMAS MÜNTZER in 1950. Three years later the depth had already reached 686 m. After the Brühlthalhalde "mine dump" had reached its full capacity a new possibility for storing the mine waste had to be found. Therefore, the Hohe Linde mine dump was put into operation in 1955. The mine waste material was transported by cable car for 900 m, then transferred to a lifter and from there rock was hauled to the final dumping point.

Production and waste dumping of the Thomas Müntzer mine came to a standstill in 1990. About 20 million tons of deadrock are deposited in the Hohe Linde forming a nearly 150 m high dump. Due to the heavy metal content of the rocks and the absence of soil overburden the mine dump has hardly any vegetation.



Tourist information Sangerhausen

☎ 0049 3464 - 19433

www.sangerhausen-tourist.de

2 Wippra Zone At the Pferdeköpfe

The Wippra zone stretches across the area of the landmark along a line in an easterly direction from Breitungungen via the Kohlenstraße "coal street" to Gorenzen. It contains metamorphic rocks. Driving along the road L 230 from Grillenberg to Wippra we cross the Kohlenstraße. Its name dates back to the time when charcoal was transported out of the forest to the metallurgical works. Right at the crossing is a car park. Walking from there we reach the former quarry at the Pferdeköpfe in five minutes. Greenschist crops out there. It was used in road construction before quarrying was shut down around 1960s.

We pass a geodetic point on our way to the quarry. That is one of five points set at different places in the Harz in the 1960's for watching the potential Harz-raising effect.



At the Pferdeköpfe



The ruin of the Grillenburg

3 Ruin Grillenburg

The ruins of the Grillenburg can be found above the site Grillenberg. We follow the signs for the pathway starting at a small parking place at the bottom of the Schlossberge on the site. The fortress was mainly erected using conglomerates and sandstones of the Rotliegend red beds (about 300 to 255 million years ago). Remarkable is the use of bricks as construction material for the superstructure. In 1217 the "Grellenberch" was first mentioned in a written document. It was used for protecting the basin area of Sangerhausen. Partly inhabited in 1483, the fortress was a ruin 100 years later. The village is much older and is mentioned in the so-called Hersfelder Zehntregister at the end of 9th century. We can find other witnesses of the past in the area of Grillenberg, for example the deserted medieval village Wüstung Hohenrode. Excavations have already been carried out there since the 1930s.



Biosphere Reserve Karst Landscape South Harz

☎ 0049 34651 - 298890

www.bioreskarstsuedharz.de

4

Zechstein belt of the South Harz Mining Museum Röhrigschacht Wettelrode

The museum in Wettelrode is nestled in the historic mining landscape of the south-eastern Harz foothills. Copper mining history in the region – once the largest copper ore mining area in Europe – can easily be recognized here. The above ground museum provides information about the formation of the deposit, geology and mineralogy as well as mining. The steel made headframe is clearly visible from far across the country. It is one of the oldest remaining mine hoists of Europe. Where the mine waste is located, there is an exhibition about mine hoisting technology and machinery, including a rack railway which was only used below ground for copper mining. A small exhibition informs visitors about the Biosphere Reserve Karst Landscape South Harz. The mining museum was opened in 1991.



Headframe Mining Museum Röhrigschacht

We can descend 283 m deep into the earth with original winding equipment. Then the mine train takes you over 1,000 m to a mining area from the 19th century where the development of the mining techniques is explained and demonstrated on exhibits. The trip below ground can accommodate up to 31 people and lasts for 75 minutes.

An interesting mining trail starts at the mining museum and leads through the old mining area for 4 km. The two routes show copper mining from the 14th to the 19th century including geological outcrops, water facilities, costeaning ditches and a ventilation oven. The mining trail passes the lake Kunstteich Wettelrode which was built in 1728 and used for mining water management purposes till 1880.

5

Rogenstein · Roestone

Schlösschenkopf near Lengefeld

The Schlösschenkopf rises up between Sangerhausen and Lengefeld and is crowned by the Moltkewarte – a look out built in 1903 at its highest point. From the tower you will have a wonderful view to the surrounding area. Roestone was mainly used for construction material. It was excavated from several small quarries in the surrounding area of the Moltkewarte. Near these sites we can see houses, churches and walls built with roestone. This special limestone comes from the lower Bunter. At that time, about 240 million years ago, this area was covered by a shallow, warm sea with a high salt content. Very small sandy carbonate pearls (so-called ooides) were formed in the water and looked like roe and therefore were called like that. Following the signs you can easily find the pathway from Lengefeld to the Moltkewarte.



Roestone



Dinsterbachschwinde

6

Karst Trail

Dinsterbach Swallow Hole

About one kilometre east of Questenberg not far away from the road to Hainrode lies the Dinsterbach swallow hole. It is the biggest swallow hole in the area of the Karst Trail, and the place where the creek Dinsterbach continues to flow underground. Its water dissolves the gypsum. Due to this there are often falling rocks. On the path you will find an information board. Walking along the grassland we reach the next board after five minutes which has information about the swallow hole located there. The sinkhole on the grassland between the path and the edge of the forest marks the underground route of the Dinsterbach. The Karst Trail about 200 km long links the karst landscape of the South Harz across the borders of the federal states of Saxony Anhalt, Thuringia and Lower Saxony. At selected points, boards inform about the manifold karst phenomena.



Opening hours: Moltkewarte at good weather:

April – Sept Fri – Sun and at bank holidays 2.00 – 6.00 pm

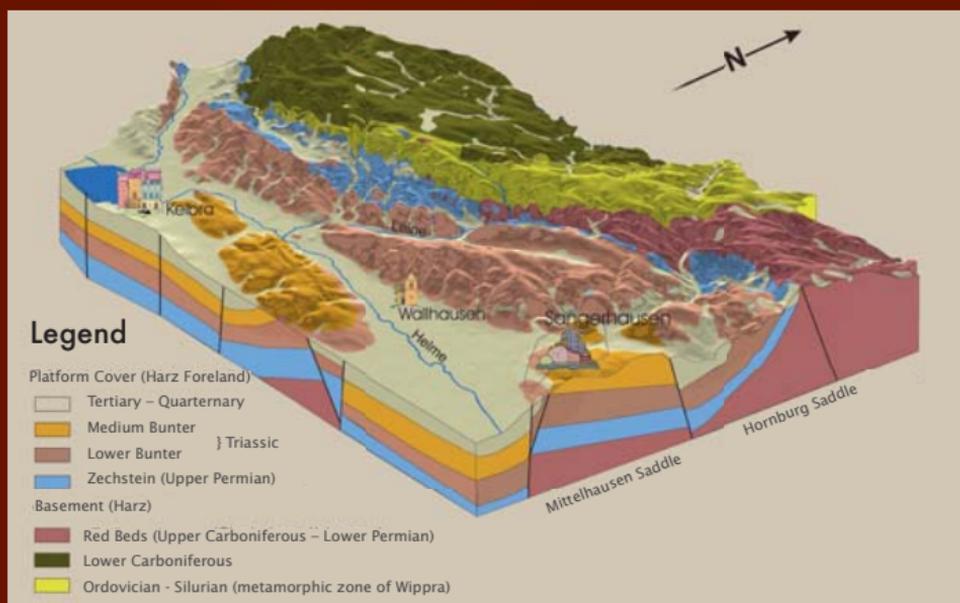


Geology of the area

Between Sangerhausen and Wallhausen there is the lowland of the river Helme. Most of the clays, silts, sands and gravel are up to 2 million years old and have a thickness of 50 m, with which the Helme filled its lowland in the Pleistocene.

They form together with the rocks of the Tertiary the unconsolidated sediment level. The 250 million years old clay, silt and sandstones of the Triassic are deposited in the subjacent table mountains (platform cover). Limestone, anhydrite and salt rocks of the Zechstein belong to the sediments of the platform cover, too. Due to tectonic processes about 80 – 50 million years ago, the original flat deposit sediments changed their position. Today rock formations of different aged rocks from different sedimentation areas are laying beside and proving vertical movements, stretching partly several hundred metres. These tectonically caused fracturing is called "Saxonian fault block tectonics".

Soluble processes caused by water begin as soon as the rocks of the Zechstein come near the surface due to their chemical contents. The process is known as karstification. This gypsum karst can be found in the whole southern Harz showing romantic caves, bizarre morphologic shapes and a rare flora seen along the karst walking paths. The roughly consolidated gravel (conglomerates) and the red sandstone of the Rotliegend red beds are older than the chemical sediments of the Zechstein. These are erosion results of the old Variscan mountain building. They come to the surface in the area of the Hornburg Sattel (anticline). The basement with the rocks of the Wippra Zone begins in the north. Caused by metamorphism (rock changing) during the formation of the Variscan mountain building 350 – 330 million years ago argillite and clay slates were formed out of clay and sandy sea deposits of the Ordovician and Silurian. To the west, sediments of the Lower Carboniferous follow.





Glossary

Landmarks are points in the landscape or actual localities which are highly visible and well-known. They serve as an initial orientation in one of the largest Geoparks worldwide and give the specific areas their names. Every landmark area is represented in a special leaflet.

Geopoints are points of particular interest. At these points, the geological history of the area or the evolution of the cultural landscape are evident and can be conveyed to visitors. Geopoints are numbered in sequence within the region of a Landmark. They can be combined to constitute an individual Geo-Route. The Geopoint No. ① is always the place which has given its name to the Landmark.

The map below will aid you with planning your own personal **Geo-Route** around the Point Cone Mine Dump Hohe Linde.

Bestellung weiterer Falblätter

Order leaflets in English

Information en français

www.harzregion.de



7

Periodic lake Bauerngraben

West of Questenberg is the Bauerngraben. It is a 10 – 15 m deep sink in the valley of the Glasebach, which “disappears” at this place in a swallow hole of a small river under a steep high karst mountain range. Water-soluble rocks are the basis for it – at this place it is gypsum. The water can seep away beneath the earth and then continues flowing in hollows beneath the earth. However, the 350 m long and 100 m wide sink empties and fills with water at sporadic times. Due to washed up sediments the swallow holes become clogged and the incoming water forms a pool. A lake arises. After a certain time the water dissolves the rocks again and the lake empties. The car park at the road from Roßla to Agnesdorf is a suitable starting point for a walk to the Bauerngraben. At the edge of the pelvis we find the checkpoint no. 213 of the “Harz hiking badge system”.



Bauerngraben



Checkpoint



Legend

- Geopark Border
- Area of Landmark 12
- Karst Hiking Trail

8

Witnesses of geology Alabaster balls and glacial pans

Embedded in the deep break-through valley of the Nasse is the site Questenberg. Its symbol is the so-called Queste, an old sun symbol. It is decorated with fresh greenery on Whit Monday every year. The so-called Questenfest takes place over several days and has been celebrated for centuries. Gypsum with alabaster balls is outcropping at the rock face at the eastern slope of the Questenberg. Alabaster balls are probably formed from calcium sulphate, which has collected at individual places within the original rocks before finally hardening to form the alabaster balls. If you go on the road coming from Hainrode you will have the best view of it. The glacial pans at the bottom of the Questenberg north of the village are also interesting. The ruin of the Questenburg, dating back to the 13th century, is on the Schlossberg and not far away from the village.



The "Queste"



Heimkehle cave

9

One of the largest gypsum karst caves Heimkehle near Uftrungen

The visitor's entrance of the Heimkehle is to the west of the road between Rottleberode and Berga. The border between Saxony-Anhalt and Thuringia crosses above the cave. Visitors can see 750 m of the cave which extends for approximately 2 km. The way around leads to corridors and halls, amongst them the Großer Dom (22 m high). The Heimkehle was first mentioned in a border document, dating back to 1753. First attempts for opening it up were made in the 20th century. Guided tours have been available since 1920. During World War II a production plant of the Junkers Flugzeugwerke was installed. Moreover an external camp of the Mittelbau-Dora Concentration Camp was located in Rottleberode. The Heimkehle is one of about 200 known caves of the sulphate karst of the Südharz. The cave arose when water ingressed through crevices and cracks in the anhydrite and dissolved it.

Opening hours: May - Oct. Tue - Sun 10.00 am - 5.00 pm

☎ **0049 34653 - 305**

www.hoehle-heimkehle.de

10

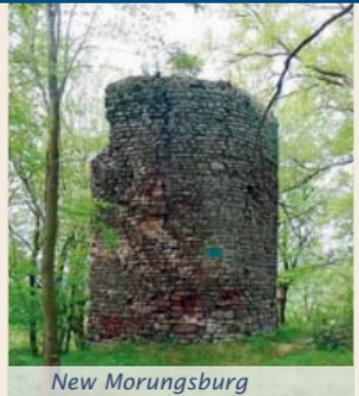
Gypsum quarrying

The Krebsbachwand near Rottleberode

South west of Rottleberode the Alter Stolberg peaks the Aue from the Thyra and the Krebsbach with an area level up to 100m high. The Krebsbachwand is important due to gypsum quarrying. In that area of the wall the gypsuming rate of the anhydrite was higher than the solution rate of gypsum, thus forming a 10 – 30 m strong gypsum crust at the surface over the lower lying anhydrite. This gypsum crust was excavated between 1950 and 1990. The precipice of the Krebsbachwand remained. Recultivation measures of the company Knauf Gips KG aim to rebuild stable forests. The rock areas form a biotope for rare species. Due to ongoing surface mining operations in border areas of the Krebsbachwand, the excavations are not accessible at present.



Krebsbachwand



New Morungsburg

11

Witnesses of history

Neue Morungsburg

The ruins of the two fortresses Alt (“old”) and Neu (“new”) Morungen are not far away from Morungen. Alt Morungen was abandoned after erecting Neu Morungen around 1200. The owners of the fortress changed several times. The counts of Stolberg also were connected to it. HEINRICH VON MORUNGEN (around 1200) was a famous minstrel. We can find Bunter, Zechstein limestone and slates of the surrounding area in the walls of the fortresses. The region has many varieties of geological multiforms. Beside the Wippra Zone stretching northern along the site with its metamorphic rocks we can also see conglomerates, catching the eye with a significant red. An ore vein goes along the area with barite and copper ore. We can easily see that ore vein in an exposure below the Neue Morungsburg close to the forest way in the valley north of the border of Morungen.

12

Important palatinate in medieval time

Palatinate Tilleda

The Königspfalz set on the hill Pflingstberg is on the bottom of the Kyffhäuser mountains. Erected in 972 the Kyffhäuser was a wedding present from emperor OTTO II († 983) for his Byzantine wife THEOPHANO († 991). Tilleda belonged to the most famous palatinates of the empire till the late medieval times. As the only completely excavated palatinate it is today a showcase example of a monarch residence of early and late medieval times.

Fundaments and parts of the buildings were exposed and partly reconstructed by substantial excavations. The whole facility forms a unique open air museum showing a good insight into people's life and work in the medieval time. The constructions are built from sandstone and dolomite, which were quarried in the surrounding area. The defence complex offers a fantastic panoramic sight.



Palatinate Tilleda



Royal Palace of Allstedt

13

High above the Rohne

Royal Palace of Allstedt

A castle that was a favourite residence among kings and emperors from the Carolingian dynasty until the Hohenstaufen dynasty once stood atop the escarpment which is today crowned by one of the later works of the famed master builder, CONRAD PFLUEGER: the Royal Palace of Allstedt. Both the son and grandson of ERNEST, Elector of Saxony, were present when THOMAS MUENTZER delivered his "Sermon to the Princes" in the Knight's Hall of the palace on July 13th, 1524, in which he denounced the lack of activity among the ruling classes in support of reform. The Renaissance roof-crown of the Gothic gatetower, visible from far and wide, was added in 1746. Six years prior to this, FRIEDRICH WILHELM HEINRICH VON TREBRA was born in the town situated on the opposite bank of the Rohne River. This friend of GOETHE was, among other things, Inspector of Mines in the Upper Harz Mountains.

Palatinate Tilleda

☎ 0049 34651 - 2923, www.pfalz-tilleda.de

Royal Palace of Allstedt

☎ 0049 34652 - 519, www.schloss-allstedt.de

Sangerhausen was first mentioned in a document in the 10th century. Around 1200 Sangerhausen received its town charter. Widely reconstructed buildings in the old town are worth a round walk. The Ulrich church dates back to the first half of 12th century, a treasure of Romanesque architecture. Worth seeing is the Jakobi church showing a rich interior. Since 1249 the town has been historically connected with the Saxonian dynasty of the Wettiner. Copper mining since 14th century and metallurgy marked the town development. In 1815 Sangerhausen became a part of Prussia and developed to an important industrial area in the second half of the 19th century.

The remarkable rose garden arranged in 1903 is a landscape park inheriting the most important rose collection of the world. More than 8,300 rose varieties and species can be seen there.



Rosarium Sangerhausen



Mammutskelett im Spengler-Museum

In the Spengler Museum you can adventure 6,000 years of human settlement in the region of Sangerhausen. About 2,000 exhibits are shown in six different sections (geology, nature study, palaeontology, prehistory, town history, mining). The biggest attraction is the complete skeleton of the old mammoth. The first parts of the animal were discovered in the ice-aged layers of the gravel pit near Edersleben in September 1930. The local researcher GUSTAV ADOLF SPENGLER († 1961) was informed and saved the skeleton in the years 1932 and 1933. Spengler's home in the old town of Sangerhausen was opened as an external museum in 2001. Walking from the museum you can reach it on foot in about 15 minutes. The museum's administration offers guided tours and project days as special programmes.

**Opening hours of the Spengler Museum : Tue – Sun 1.00 pm – 5.00 pm
(Spengler's home, Hospitalstraße 56, only Sun 1.00 pm – 5.00 pm).**

☎ **0049 3464 – 573048**

www.spenglermuseum.de



Selected information points Restaurants



Bergmannsklaus
Sangerhausen, OT Wettelrode
roehrigschacht.de
☎ **0049 3464 - 5447266**



Gasthaus „Zur Queste“
Gemeinde Südharz, OT Questenberg
www.zurqueste.de
☎ **0049 334651 - 2792**



Harzer Erlebnishof Grillenberg
Sangerhausen, OT Grillenberg
harzererlebnishof.de
☎ **0049 3464 - 5800**



REGIONALVERBAND HARZ E.V.

The Regionalverband Harz is a non-profit association. Its full members include the administrative districts of Goslar, Goettingen, Harz, Mansfeld-Suedharz and Nordhausen, as well as the World Heritage-listed city of Quedlinburg. The association's goals are the promotion of art and culture, the care and protection of historical monuments and environmental conservation and landscape management. It further aims to build tolerance in all areas of culture and foster international understanding among peoples and also to preserve local history and traditions. One way, among many, in which these goals are achieved is trusteeship of nature parks in the Harz region. The Regionalverband Harz, with the help of its 130 supporting members, is also responsible for the southern section of the UNESCO-Geopark, which covers an area of 6,202 km².

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Internet:

Authors: Dr. Klaus George, Uwe Kramer, Christiane Linke,
Dr. Matthias Thomae, Dr. Jörg Ziebell

Translator: Silvia Baldauf, Darren Mann

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